The Aeronautical Journal of the Royal Aeronautical Society

INCORPORATING THE INSTITUTION OF AERONAUTICAL ENGINEERS AND THE HELICOPTER ASSOCIATION OF GREAT BRITAIN

VOLUME LXXX

JANUARY–DECEMBER 1976

The Aeronautical Journal of the Royal Aeronautical Society

INCORPORATING THE INSTITUTION OF AERONAUTICAL ENGINEERS AND THE HELICOPTER ASSOCIATION OF GREAT BRITAIN

VOLUME LXXX

JANUARY – DECEMBER 1976

ADVANCED materials and their use in civil aircraft structures, Dr. A. C. Ham and A. J. Willshire, pp. 434-441 (Oct.).

AERODYNAMICS
- Aerodynamics, A. B. Haines, pp. 277-293 (July).
- Aeroelastic stability and control of an oblique wing, R. T. Jones and J. W. Nisbet, pp. 365-369 (Aug.).
- An easy graphical method of obtaining generalised first order yacht performance, L. G. Dawson, pp. 175-182 (April).
- The independence of upper and lower wing flows at supersonic speeds, L. C. Squire, pp. 452-456 (Oct.).
- The initial roll-up of a thick, two-dimensional wake behind a wing of finite span, H. Portnoy, pp. 442-447 (Oct.).
- Lift augmentation on a moderately swept wing by spanwise blowing, Sqn. Ldr. K. P. Clarke, pp. 447-451 (Oct.).
- Numerical study of non-uniform axisymmetric under-expanded supersonic jet impingement on a finite disc, K. Sankara Rao, S. C. Purohit and M. S. Sarma, pp. 313-317 (July).
- The response of a pitot tube in the presence of a weak shock wave, G. T. Kalghatgi and B. L. Hunt, pp. 183-185 (April).

AERO ENGINE and its progress—fifty years after Griffith, F. W. Armstrong, pp. 499-520 (Dec.).

AGRICULTURAL and special purpose aircraft—a manufacurer's viewpoint, N. D. Norman, pp. 93-101 (March).

AIRCRAFT
- A300 Airbus (Illus.), p. 108 (March).
- BE2, cockpit (Illus.), p. 328 (Aug.).
- Boeing 707 (prototype) (Illus.), p. 107 (March).
- Boeing 747 (Illus.), p. 108 (March).
- Bristol Britannia (Illus.), p. 106 (March).
- Concorde (Illus.), p. 111 (March).
- Concorde flight deck (Illus.), p. 213 (May).
- Concorde 208 (Illus.), Cover (June).
- de Havilland Albatross (Illus.), p. 105 (March).
- de Havilland Comet I (Illus.), p. 107 (March).
- de Havilland Moth, cockpit (Illus.), p. 333 (Aug.).
- Douglas DC-3 (Illus.), p. 105 (March).
- Douglas DC-7C (Illus.), p. 106 (March).
- Fokker F28 Fellowship (Illus.), p. 108 (March).
- F. VII-3m (Illus.), p. 105 (March).
- H.P. W/8b (Illus.), p. 105 (March).
- Hawker Hurricane, cockpit (Illus.), p. 338 (Aug.).
- Hawker Siddeley Hawk T Mk. I two-seat ground attack/trainer aircraft, D. M. S. Simpson, pp. 162-171, Cover (Illus.) (April).
- HS.141 project for inter-city VSTOL airliner (Illus.), p. 115 (March).
- Land development aircraft, D. Lockspeiser, pp. 70-74, Cover (Illus.) (Feb.).
- Lockheed Constellation (Illus.), p. 106 (March).
- Lockheed TriStar (Illus.), Cover (March).
- Lockheed TriStar (Illus.), p. 108 (March).
- McDonnell Douglas project for advanced SST (Illus.), p. 113 (March).
- NASA concept for skew-wing aircraft (Illus.), p. 114 (March).
- Saab JA 37 Viggen cockpit (Illus.), Cover (Sept.).
- Sepecat Jaguar (Illus.), Cover (Jan.).
- Space Shuttle Orbiter (artist's impression) (Illus.), Cover (Nov.).
- Sud Caravelle (Illus.), p. 107 (March).
- VFW 614 (Illus.), Cover (Aug.).
- Vickers Super VC-10 (Illus.), p. 107 (March).
- Vickers Viscount (Illus.), p. 106 (March).

Helicopters
- Bell 212 (Illus.), p. 255 (June).
- Bell JetRanger (Illus.), p. 255 (June).
- Sikorsky S58T (Illus.), p. 254 (June).
- Sikorsky S61N (Illus.), p. 254 (June).
- S61 (Illus.), p. 257 (June).
- Westland Wessex Mk. 5 (Illus.), p. 423 (Oct.).

Hovercraft
- SR.N4 Mk. 1 'Princess Margaret' (Illus.), p. 354 (Aug.).
- SR.N4 Mk. 2 Hoverlloyd 'Swift' (Illus.), p. 355 (Aug.).

AIRCRAFT DESIGN
- Aerodynamics, A. B. Haines, pp. 277-293 (July).
- Agricultural and special purpose aircraft—a manufacturer's viewpoint, N. D. Norman, pp. 93-101 (March).
- The analytical geometry of a simple skew-hinge mechanism, F. M. Burrows, pp. 487-488 (Nov.).
- Design for safety, W. Tye, pp. 172-174 (April).
- Design organisation—past, present and future, H. G. Conway, pp. 205-208 (May).
- Jaguar—a collaborative military aircraft programme, I. R. Yates, pp. 35-43 (Jan.).
- Land Development Aircraft, D. Lockspeiser, pp. 70-74 (Feb.).
- The pay-off for advanced technology in commercial aircraft design and operation, D. G. Brown and K. S. Lawson, pp. 461-467 (Nov.).
- A view of air freight developments in the next decade, A. D. Reynolds and M. L. Olason, pp. 294-302 (July).

AIR TRAFFIC CONTROL
- Future system consideration for operations of aircraft in the terminal movement area, G. C. Howell, pp. 51-60 (Feb.).

AIR TRANSPORT
- Airline managerial efficiency, R. J. Pearson, pp. 475-482 (Nov.).
- Civil helicopter operations with British Airways: Part 1—Operations, Capt. J. A. Cameron, pp. 253-257; Part 2—Maintenance, Dr. M. A. Parker, pp. 258-263 (June).
- Costs and decision making, J. C. Wimpenny, pp. 402-410 (Sept.).
- Operations, Capt. Charles Owens, pp. 350-353 (Aug.).
- The pay-off for advanced technology in commercial aircraft design and operation, D. G. Brown and K. S. Lawson, pp. 461-467 (Nov.).
- The technology and economics of air transport in its next phase, K. G. Wilkinson, pp. 102-126 (March).
- A view of air freight developments in the next decade, A. D Reynolds and M. L. Olason, pp. 294-302 (July).

AIRLINE managerial efficiency, R. J. Pearson, pp. 475-482 (Nov.).

AMINZADEH, M. and MODI, V. J.
- A theoretical approach to the wedge shaped hot film probe performance. pp. 489-491 (Nov.).

ANALYTICAL geometry of a simple skew-hinge mechanism, F. M. Burrows, pp. 487-488 (Nov.).

APPRAISAL of present and future large commercial hovercraft, R. L. Wheeler, pp. 354-364 (Aug.).

ARMSTRONG, F. W.
- The aero engine and its progress—fifty years after Griffith, pp. 499-520 (Dec.).

ASPECTS of system procedure development for Concorde and future aircraft, J. D. Hobbs, pp. 213-221 (May).

ASSESSMENT of noise, with particular reference to aircraft, Dr. D. W. Robinson, pp. 147-161 (April).

ATTITUDE control system for a flexible satellite providing active damping of flexural motion, J. M. Gething and K. F. Gill, pp. 134-139 (March).

AVIONICS
- Handling qualities of aircraft with stability and control augmentation systems—a fundamental approach, J. Hodgkinson, W. J. LaManna and J. L. Heyde, pp. 75-81 (Feb.).
- Inertial navigation and its impact on future avionic systems, W. H. McKinlay, pp. 29-34 (Jan.).
- Investigation into the optimum use of advanced displays in future transport aircraft, R. E. Hillman and J. W. Wilson, pp. 377-384 (Sept.).

BOUNDARY LAYERS
- A theoretical approach to the wedge shaped hot film probe performance, M. Aminzadeh and V. J. Modi, pp. 489-491 (Nov.).

BRADLEY, J. and LAKE, Sqn. Ldr. H. B.
- The problem of certifying helicopters for flight in icing conditions, pp. 419-433 (Oct.).

BRIEF study of airspeed fluctuations on the landing approach in relation to reported and measured surface wind conditions, G. Terry, pp. 411-413 (Sept.).

BROOKING, R. L., MARTLEW, D. L., KENNEDY, A. S. and HAWKINS, J. M.
The design, construction and operation of the noise test facility at the NGTE, pp. 1-19 (Jan.).

BROWN, D. G. and LAWSON, K. S.
The economics and noise of subsonic aircraft, pp. 61-69 (Feb.).
The pay-off for advanced technology in commercial aircraft design and operation, pp. 461-467 (Nov.).

BUCKLING of simply supported laminated plates on elastic foundations, G. J. Turvey, pp. 530-535 (Dec.).

BURROWS, F. M.
The analytical geometry of a simple skew-hinge mechanism, pp. 487-488 (Nov.).

CALDER, Dr. P. H. and GUPTA, P. C.
Future SST engines with particular reference to Olympus 593 evolution and Concorde experience, pp. 235-252 (June).

CAMERON, Capt. J. A.
Civil helicopter operations with British Airways, Part 1—Operations, pp. 253-257 (June).

CERTIFICATION AND AIRWORTHINESS
Design for safety, W. Tye, pp. 172-174 (April).
The principles and practice of airworthiness control, P. S. Langford, pp. 20-28 (Jan.).
The problems of certifying helicopters for flight in icing conditions, Sqn. Ldr. H. B. Lake and J. Bradley, pp. 419-433 (Oct.).

CHORLEY, R. A.
Seventy years of flight instruments and displays, pp. 323-342 (Aug.).

CIVIL helicopter operations with British Airways, Part 1—Operations, Capt. J. A. Cameron, pp. 253-257 (June).
Part 2—Maintenance, Dr. M. A. Parker, pp. 258-263 (June).

CLARKE, Sqn. Ldr. K. P.
Lift augmentation on a moderately swept wing by spanwise blowing, pp. 447-451 (Oct.).

COMPONENT MANUFACTURE AND CONTROL
The principles and practice of airworthiness control, P. S. Langford, pp. 20-28 (Jan.).

COMPOSITE MATERIALS
Buckling of simply supported laminated plates on elastic foundations, G. J. Turvey, pp. 530-535 (Dec.).
Uniformly loaded, simply supported, anti-symmetrically laminated, cross and angle-ply strips on a Winkler/Pasternak foundation, G. J. Turvey, pp. 222-226 (May).

CO-OPERATION and Diversification, Dr. W. J. Strang, pp. 209-212 (May).

CONWAY, H. G.
Design organisation—past, present and future, pp. 205-208 (May).

CORRESPONDENCE
Collapsing vortex wakes, T. J. Grant, p. 263 (June).

COSTS and decision making, J. C. Wimpenny, pp. 402-410 (Sept.).

COX, M. and HIGTON, D. R.
Engine noise—a look ahead, pp. 483-486 (Nov.).

DAWSON, L.G.
An easy graphical method of obtaining generalised first order yacht performance, pp. 175-182 (April).

DEFENCE and Industry—where now? ACM Sir Frederick Rosier, pp. 128-133 (March).

DENNING, R. M., MILLER, S. C. and WRIGHT, G. H.
Future trends in aero gas turbine design—Part 1—Conventional engines, pp. 343-349 (Aug.). Part 2—Unconventional engines, pp. 385-393 (Sept.).

DESIGN for safety. W. Tye, pp. 172-174 (April).

DESIGN organisation—past, present and future, H. G. Conway, pp. 205-208 (May).

DETERMINATION of the damping of a system using a planimeter, J. B. Russell, pp. 82-84 (Feb.).

EASY graphical method of obtaining generalised first order yacht performance, L. G. Dawson, pp. 175-182 (April).

ECONOMICS OF AIR TRANSPORT
Costs and decision making, J. C. Wimpenny, pp. 402-410 (Sept.).
The technology and economics of air transport in its next phase, K. G. Wilkinson, pp. 102-126 (Mar.).

ENGINE noise—a look ahead, D. R. Higton and M. Cox, pp. 483-486 (Nov.).

ENGINE NOISE TEST FACILITY
The design, construction and operation of the noise test facility at the NGTE. D. L. Martlew, J. M. Hawkins, R. L. Brooking, and A. S. Kennedy, pp. 1-19 (Jan.).

ENGINEERING and development problems of Spacelab, H. E. W. Hoffmann, pp. 468-474 (Nov.).

ERRATA
To paper by Dr. A. C. Ham and A. J. Willshire published in October, p. 496 (Nov.).

FLIGHT DOCUMENTATION
Aspects of system procedure development for Concorde and future aircraft, J. D. Hobbs, pp. 213-221 (May).

FLIGHT INSTRUMENTATION
Investigation into the optimum use of advanced displays in future transport aircraft, R. E. Hillman and J. W. Wilson, pp. 377-384 (Sept.).
Seventy years of flight instruments and displays, R. A. Chorley, pp. 323-342 (Aug.).

FLIGHT TESTING
Hawker Siddeley Hawk T Mk 1 two-seat ground attack trainer aircraft, D. M. S. Simpson, pp. 162-171 (April).
The problems of certifying helicopters for flight in icing conditions, Sqn. Ldr. H. B. Lake and J. Bradley, pp. 419-433 (Oct.).

FLUID DYNAMICS
A theoretical approach to the wedge shaped hot film probe performance, M. Aminzadeh and V. J. Modi, pp. 489-491 (Nov.).

FOLLAND MEMORIAL LECTURE, THIRD
Seventy years of flight instruments and displays, R. A. Chorley, pp. 323-342 (Aug.).

FORWARD throw of the caustic associated with transonic acceleration of a supersonic transport, On the, R. O. Onyeonwu, pp. 227-228 (May).

FUTURE SST engines with particular reference to Olympus 593 evolution and Concorde experience, Dr. P. H. Calder and P. C. Gupta, pp. 235-252 (June).

FUTURE trends in aero gas turbine design—R. M. Denning, S. C. Miller and G. H. Wright. Part 1 Conventional engines, pp. 343-349 (Aug.). Part 2 Unconventional engines, pp. 385-393 (Sept.).

GAS TURBINES
The aero engine and its progress—fifty years after Griffith, F. W. Armstrong, pp. 499-520 (Dec.).
The design, construction and operation of the noise test facility at the NGTE, D. L. Martlew, J. M. Hawkins, R. L. Brooking and A. S. Kennedy, pp. 1-19 (Jan.).
Future SST engines with particular reference to Olympus 593 evolution and Concorde experience, Dr. P. H. Calder and P. C. Gupta, pp. 235-252 (June).
Future trends in aero gas turbine design, R. M. Denning, S. C. Miller and G. H. Wright. Part 1 Conventional engines, pp. 343-349 (Aug.). Part 2 Unconventional engines, pp. 385-393 (Sept.).
Griffith's early ideas on turbomachinery aerodynamics, A. R. Howell, pp. 521-529 (Dec.).

GETHING, J. M. and GILL, K. F.
An attitude control system for a flexible satellite providing active damping of flexural motion, pp. 134-139 (March).

GILL, K. F. and GETHING, J. M.
An attitude control system for a flexible satellite providing active damping of flexural motion, pp. 134-139 (March).

GRIFFITH'S early ideas on turbomachinery aerodynamics, A. R. Howell, pp. 521-529 (Dec.).

GUPTA, P. C. and CALDER, Dr. P. H.
Future SST engines with particular reference to Olympus 593 evolution and Concorde experience, pp. 235-252 (June).

HAINES, A. B.
Aerodynamics, pp. 277-293 (July).

HALFORD MEMORIAL LECTURE
Civil helicopter operations with British Airways: Part 1—Operations, Capt. J. A. Cameron, pp. 253-257, Part 2—Maintenance, Dr. M. A. Parker, pp. 258-263 (June).

HAM, Dr. A. C. and WILLSHIRE, A. J.
Advanced materials and their use in civil aircraft structures, pp. 434-441 (Oct.).

HANDLING qualities of aircraft with stability and control augmentation systems—a fundamental approach, J. Hodgkinson, W. J. LaManna and J. L. Heyde, pp. 75-81 (Feb.).

HAWKER SIDDELEY Hawk T Mk 1 two-seat ground attack/trainer aircraft, D. M. S. Simpson, pp. 162-171 (April).

HAWKINS, J. M., BROOKING, R. L., MARTLEW, D. L. and KENNEDY, A. S.
The design, construction and operation of the noise test facility at the NGTE, pp. 1-19 (Jan.).

HELICOPTERS
Civil helicopter operations with British Airways: Part 1—Operations, Capt. J. A. Cameron, pp. 253-257, Part 2—Maintenance, Dr. M. A. Parker, pp. 258-263 (June).
The problem of certifying helicopters for flight in icing conditions, Sqn. Ldr. H. B. Lake and J. Bradley, pp. 419-433 (Oct.).

HEYDE, J. L., HODGKINSON, J. and LaMANNA, W. J.
Handling qualities of aircraft with stability and control augmentation systems—a fundamental approach, pp. 75-81 (Feb.).

HIGTON, D. R. and COX, M.
Engine noise—a look ahead, pp. 483-486 (Nov.).

HILLMAN, R. E. and WILSON, J. W.
Investigation into the optimum use of advanced displays in future transport aircraft, pp. 377-384 (Sept.).

HISTORICAL AVIATION
Seventy years of flight instruments and displays, R. A. Chorley, pp. 323-342 (Aug.).

HOBBS, J. D.
Aspects of system procedure development for Concorde and future aircraft, pp. 213-221 (May).

HODGKINSON, J. LaMANNA, W. J. and HEYDE, J. L.
Handling qualities of aircraft with stability and control augmentation systems—a fundamental approach, pp. 75-81 (Feb.).

HOFFMANN, H. E. W.
Engineering and development problems of Spacelab, pp. 468-474 (Nov.).

HOVERCRAFT
An appraisal of present and future large commercial hovercraft, R. L. Wheeler, pp. 354-364 (Aug.).

HOWELL, A. R.
Griffith's early ideas on turbomachinery aerodynamics, pp. 521-529 (Dec.).

HOWELL, G. C.
Future system consideration for operations of aircraft in the terminal movement area, pp. 51-60 (Feb.).

HUNT, B. L. and KALGHATGI, G. T.
The response of a pitot tube in the presence of a weak shock wave, pp. 183-185 (April).

ICING
The problems of certifying helicopters for flight in icing conditions, Sqn. Ldr. H. B. Lake and J. Bradley, pp. 419-433 (Oct.).

INCENTIVES AND CONTRACTS
Rewards and penalties for suppliers of equipment, R. D. C. Passey, pp. 303-312 (July).

INDEPENDENCE of upper and lower wing flows at supersonic speeds, L. C. Squire, pp. 452-456 (Oct.).

INERTIAL navigation and its impact on future avionics systems, W. H. McKinlay, pp. 29-34 (Jan.).

INITIAL roll-up of a thick, two-dimensional wake behind a wing of finite span, H. Portnoy, pp. 442-447 (Oct.).

INTERNATIONAL COLLABORATION
Co-operation and diversification, Dr. W. J. Strang, pp. 209-212 (May).
Defence and industry—where now? ACM Sir Frederick Rosier, pp. 128-133 (March).
Engineering and development problems of Spacelab, H. E. W. Hoffmann, pp. 468-474 (Nov.).
Jaguar—a collaborative military aircraft programme, I. R. Yates, pp. 35-43 (Jan.).

INVESTIGATION into the optimum use of advanced displays in future transport aircraft, R. E. Hillman and J. W. Wilson, pp. 377-384 (Sept.).

JAGUAR—a collaborative military aircraft programme, I. R. Yates, pp. 35-43 (Jan.).

JONES, R. T. and NISBET, J. W.
Aeroelastic stability and control of an oblique wing, pp. 365-369 (Aug.).

KALGHATGI, G. T. and HUNT, B. L.
The response of a pitot tube in the presence of a weak shock wave, pp. 183-185 (April).

KENNEDY, A. S., BROOKING, R. L., HAWKINS, J. M. and MARTLEW, D. L.
The design, construction and operation of the noise test facility at the NGTE, pp. 1-19 (Jan.).

KYRIAKIDES, S., LEE, C. T. and WEBBER, J. P. H.
On the wrinkling of honeycomb sandwich columns with laminated cross-ply faces, pp. 264-272 (June).

LAKE, Sqn. Ldr. H. B. and BRADLEY, J.
The problem of certifying helicopters for flight in icing conditions, pp. 419-433 (Oct.).

LaMANNA, W. J., HEYDE, J. L. and HODGKINSON, J.
Handling qualities of aircraft with stability and control augmentation systems—a fundamental approach, pp. 75-81 (Feb.).

LAND development aircraft, D. Lockspeiser, pp. 70-74 (Feb.).

LANGFORD, P. S.
The principles and practice of airworthiness control, pp. 20-28 (Jan.).

LAWSON, K. S. and BROWN, D. G.
The economics and noise of subsonic aircraft, pp. 61-69 (Feb.).

LEE, C. T., WEBBER, J. P. H. and KYRIAKIDES, S.
On the wrinkling of honeycomb sandwich columns with laminated cross-ply faces, pp. 264-272 (June).

LIFT augmentation on a moderately swept wing by spanwise blowing, Sqn. Ldr. K. P. Clarke, pp. 447-451 (Oct.).

LOCKSPEISER, D.
Land development aircraft, pp. 70-74 (Feb.).

MARTLEW, D. L., HAWKINS, J. M., KENNEDY, A. S. and BROOKING, R. L.
The design, construction and operation of the noise test facility at the NGTE, pp. 1-19 (Jan.).

MATERIALS
Advanced materials and their use in civil aircraft structures, Dr. A. C. Ham and A. J. Willshire, pp. 434-441 (Oct.).

MANAGEMENT STUDIES
Co-operation and diversification, Dr. W. J. Strang, pp. 209-212 (May).
Design organisation—past, present and future, H. G. Conway, pp. 205-208 (May).

MAINTENANCE
Civil helicopter operations with British Airways: Part 2—Maintenance, Dr. M. A. Parker, pp. 258-263 (June).

McKINLAY, W. H.
Inertial navigation and its impact on future avionics systems, pp. 29-34 (Jan.).

METEOROLOGY
A brief study of airspeed fluctuations on the landing approach in relation to reported and measured surface wind conditions, G. Terry, pp. 411-413 (Sept.).

MILITARY AVIATION
Defence and industry—where now? ACM Sir Frederick Rosier, pp. 128-133 (Mar.).

MILLER, S. C., WRIGHT, G. H. and DENNING, R. M.
Future trends in aero gas turbine design: Part 1—Conventional engines, pp. 343-349 (Aug.). Part 2—Unconventional engines, pp. 385-393 (Sept.).

MODI, V. J. and AMINZADEH, M.
A theoretical approach to the wedge shaped hot film probe performance, pp. 489-491 (Nov.).

NAVIGATION
Inertial navigation and its impact on future avionics systems, W. H. McKinlay, pp. 29-34 (Jan.).

NISBET, J. W. and JONES, R. T.
Aeroelasic stability and control of an oblique wing, pp. 365-369 (Aug.).

NOISE
The assessment of noise, with particular reference to aircraft, Dr. D. W. Robinson, pp. 147-161 (April).
The design, construction and operation of the noise test facility at the NGTE, D. L. Martlew, J. M. Hawkins, R. L. Brooking and A. S. Kennedy, pp. 1-19 (Jan.).
The economics and noise of subsonic aircraft, D. G. Brown and K. S. Lawson, pp. 61-69 (Feb.).
Engine noise—a look ahead, D. R. Higton and M. Cox, pp. 483-486 (Nov.).
On the forward throw of the caustic associated with transonic acceleration of a supersonic transport, R. O. Onyeonwu, pp. 227-228 (May).
Putting a value on noise, Prof. E. J. Richards, pp. 193-204 (May).

NON-ACTIVE nutation damping for single-spin spacecraft of all mass distributions, S. W. Tonkin, pp. 394-401 (Sept.).

NORMAN, N. D.
Agricultural and special purpose aircraft—a manufacturer's viewpoint, pp. 93-101 (March).

OLASON, M. L. and REYNOLDS, A. D.
A view of air freight developments in the next decade, pp. 294-302 (July).

ON the wrinkling of honeycomb sandwich columns with laminated cross-ply faces, J. P. H. Webber, S. Kyriakides and C. T. Lee, pp. 264-272 (June).

ONYEONWU, R. O.
On the forward throw of the caustic associated with transonic acceleration of a supersonic transport, pp. 227-228 (May).

OPERATIONS
Aspects of system procedure development for Concorde and future aircraft, J. D. Hobbs, pp. 213-221 (May).
The economics and noise of subsonic aircraft, D. G. Brown and K. S. Lawson, pp. 61-69 (Feb.).

OPERATIONS
Future system consideration for operations of aircraft in the terminal movement area, G. C. Howell, pp. 51-60 (Feb.).
Operations, Capt. Charles Owens, pp. 350-353 (Aug.).

OWENS, Capt. Charles
Operations, pp. 350-353 (Aug.).

PARKER, Dr. M. A.
Civil helicopter operations with British Airways. Part 2—Maintenance, pp. 258-263 (June).

PASSEY, R. D. C.
Rewards and penalties for suppliers of equipment, pp. 303-312 (July).

PAY-OFF for advanced technology in commercial aircraft design and operation, D. G. Brown and K. S. Lawson, pp. 461-467 (Nov.).

PEARSON, R. J.
Airline managerial efficiency, pp. 475-482 (Nov.).

PRINCIPLES and practice of airworthiness control, P. S. Langford, pp. 20-28 (Jan.).

PIERSON, R. K., MEMORIAL LECTURE—23rd
Defence and industry—where now? ACM Sir Frederick Rosier, pp. 128-133 (March)

PORTNOY, H.
The initial roll-up of a thick, two-dimensional wake behind a wing of finite span, pp. 442-447 (Oct.).

PROPULSION
The aero engine and its progress—fifty years after Griffith, F. W. Armstrong, pp. 499-520 (Dec.).
Future SST engines with particular reference to Olympus 593 evolution and Concorde experience, Dr. P. H. Calder and P. C. Gupta, pp. 235-252 (June).

Future trends in aero gas turbine design—R. M. Denning, S. C. Miller and G. H. Wright. Part 1—Conventional engines, pp. 343-349 (Aug.). Part 2—Unconventional engines, pp. 385-393 (Sept.).
Griffith's early ideas on turbomachinery aerodynamics, A. R. Howell, pp. 521-529 (Dec.).

PUROHIT, S. C., SARMA, M. S. and SANKARA RAO, K.
Numerical study of non-uniform axisymmetric under-expanded supersonic jet impingement on a finite disc, pp. 313-317 (July).

PUTTING a value on noise, Prof. E. J. Richards, pp. 193-204 (May).

RAeS/KNvL EXCHANGE LECTURE
The assessment of noise, with particular reference to aircraft, Dr. D. W. Robinson, pp. 147-161 (April).

RESPONSE of a pitot tube in the presence of a weak shock wave, G. T. Kalghatgi and B. L. Hunt, pp. 183-185 (April).

REVIEWS—AUTHORS
Baker, Anne and Ivelaw-Chapman, ACM Sir R., Wings over Kabul—the First Airlift, p. 86 (Feb.).
Barnes, C. H., Handley Page Aircraft Since 1907, p. 457 (Oct.).
Beatty, David, The Water Jump—the Story of Transatlantic Flight, p. 536 (Dec.).
Brameller, A., Sparsity: Its Practical Application to Systems Analysis, p. 230 (May).
Bramwell, A. R. S., Helicopter Dynamics, p. 370 (Aug.).
Foxworth, T. G., The Speed Seekers, p. 86 (Feb.).
Francis, J. R. D., Fluid Mechanics for Engineering Students, p. 493 (Nov.).
Friedman, J. J., A New Air Transport Policy for the North Atlantic, p. 457 (Oct.).
Goodger, E. M., Hydrocarbon Fuels, p. 85 (Feb.).
Harker, R. W., Rolls-Royce from the Wings, p. 492 (Nov.).
Hoerner, S. F., Fluid Dynamic Drag, p. 371 (Aug.).
Houghton, E. L. and Carruthers, N. B., Wind Forces on Buildings and Structures, p. 414 (Sept.).
Kneifel, Dr. J. L., Air Laws and Treaties of the Comecon States, p. 186 (April).
Küchemann, D., Progress in Aerospace Sciences, Vol. 16, No. 3, p. 186 (April).
Lewis, P., The British Fighter Since 1912: sixty years of design and development, p. 140 (March).
Lewis, P., The British Bomber Since 1914, p. 273 (June).
Lighthill, Sir James, Mathematical Biofluiddynamics, p. 229 (May).
Mead, C. Hoge, Wings over the World, p. 86 (Feb.).
Monin, A. S. and Yaglom, A. M., Statistical Fluid Mechanics: Mechanics of Turbulence, Vol. 2, p. 44 (Jan.).
Morrow, Anne, The Flower and the Nettle, p. 318 (July).
Nayler, J. L. and Nayler, G. H. F., A Dictionary of Mechanical Engineering, p. 85 (Feb.).
Ogunbanwo, Dr. O. O., International Law and Outer Space Activities, p. 273 (June).
Pelham, D., The Penguin Book of Kites, p. 370 (Aug.).
Pugsley, Sir A., The Works of Isambard Kingdom Brunel, p. 457 (Oct.).
Rajaratnam, N., Turbulent Jets, p. 492 (Nov.).
Rooke, D. P. and Cartwright, D. J., Compendium of Stress Intensity Factors, p. 229 (May).
Saunders, G. H., Dynamics of Helicopter Flight, p. 44 (Jan.).
Schlaifer, R. and Heron, S. D., Development of Aircraft Engines and Fuels, p. 318 (July).
Sherwin, Dr. K., To Fly Like a Bird, p. 140 (March).
Sneddon, I. N. (Ed.), Encyclopaedic Dictionary of Mathematics for Engineers and Applied Scientists, p. 371 (Aug.).
Springer, G. S., Erosion by Liquid Impact, p. 492 (Nov.).
Sutton, G. P. and Ross, D. M., Rocket Propulsion Elements: An Introduction to the Engineering of Rockets, p. 415 (Sept.).
Torenbeek, E., Synthesis of Subsonic Airplane Design, p. 370 (Aug.).
Townsend, A. A., The Structure of Turbulent Shear Flow, p. 44 (Jan.).
Turnbull, D. E., Fluid Power Engineering, p. 273 (June).
Walsh, J. E., First Flight—the Untold Story of the Wright Brothers, p. 536 (Dec.).
Wassenbergh, H. A., Public International Air Transportation Law in a New Era, p. 273 (June).
Van Dyke, M. D., Perturbation Methods in Fluid Mechanics, p. 229 (May).
Whyte, R. R., Engineering Progress Through Trouble, p. 44 (Jan.).
Williams, Prof. A., Combustion of Sprays of Liquid Fuels, p. 414 (Sept.).
Wood, D., Attack Warning Red, p. 318 (July).
Zaganescu, F., De la Icar la Cuceritorii lunii, p. 186 (April).

REVIEWS/TITLES
Air Laws and Treaties of the Comecon States, Dr. J. L. Kneifel, p. 186 (April).
Attack Warning Red, D. Wood, p. 318 (July).
The British Bomber Since 1914 (2nd Edition), P. Lewis, p. 274 (June).
The British Fighter Since 1912: sixty years of design and development, P. Lewis, p. 140 (March).
Combustion of Sprays of Liquid Fuels, Prof. A. Williams, p. 414 (Sept.).
Compendium of Stress Intensity Factors, D. P. Rooke and D. J. Cartwright, p. 229 (May).
De la Icar la Cuceritorii lunii, F. Zaganescu, p. 186 (April).
Development of Aircraft Engines and Fuels, R. Schlaifer and S. D. Heron, p. 318 (July).
A Dictionary of Mechanical Engineering, J. L. Nayler and G. H. F. Nayler, p. 85 (Feb.).
Dynamics of Helicopter Flight, G. H. Saunders, p. 44 (Jan.).
Encyclopaedic Dictionary of Mathematics for Engineers and Applied Scientists, I. N. Sneddon (Ed.), p. 371 (Aug.).
Engineering Progress through Trouble, R. R. Whyte, p. 44 (Jan.).
Erosion by Liquid Impact, G. S. Springer, p. 492 (Nov.).
First Flight—the Untold Story of the Wright Brothers, J. E. Walsh, p. 536 (Dec.).
The Flower and the Nettle, Anne Morrow, p. 318 (July).
Fluid Dynamic Drag, S. F. Hoerner, p. 371 (Aug.).
To fly like a bird, Dr. K. Sherwin, p. 140 (March).
Fluid Mechanics for Engineering Students, J. R. D. Francis, p. 493 (Nov.).
Fluid Power Engineering, D. E. Turnbull, p. 273 (June).
Handley Page Aircraft Since 1907, C. H. Barnes, p. 457 (Oct.).
Helicopter Dynamics, A. R. S. Bramwell, p. 370 (Aug.).
Hydrocarbon Fuels, E. M. Goodger, p. 85 (Feb.).
International Law and Outer Space Activities, Dr. O. O. Ogunbanwo, p. 273 (June).
Mathematical Biofluiddynamics, Sir James Lighthill, p. 229 (May).
A New Air Transport Policy for the North Atlantic, J. J. Friedman, p. 457 (Oct.).
The Penguin Book of Kites, D. Pelham, p. 370 (Aug.).
Perturbation Methods in Fluid Mechanics, M. D. Van Dyke, p. 229 (May).
Progress in Aerospace Sciences, D. Küchemann (Ed.), p. 186 (April).
Public International Air Transportation Law in a New Era, H. A. Wassenbergh, p. 273 (June).
Rocket Propulsion Elements: An Introduction to the Engineering of Rockets, G. P. Sutton and D. M. Ross, p. 415 (Sept.).
Rolls-Royce from the Wings, R. W. Harker, p. 492 (Nov.).
Sparsity: Its Practical Application to Systems Analysis, A. Brameller, p. 230 (May).
The Speed Seekers, T. G. Foxworth, p. 86 (Feb.).
Statistical Fluid Mechanics: Mechanics of Turbulence, Vol 2, A. S. Monin and A. M. Yaglom, p. 44 (Jan.).
The Structure of Turbulent Shear Flow, A. A. Townsend, p. 44 (Jan.).
Synthesis of Subsonic Airplane Design, E. Torenbeek, p. 370 (Aug.).
Turbulent Jets, N. Rajaratnam, p. 492 (Nov.).
Water Jump—the Story of Transatlantic Flight, David Beatty, p. 536 (Dec.).
Wind Forces on Buildings and Structures, E. L. Houghton and N. B. Carruthers, p. 414 (Sept.).
Wings over Kabul—the First Airlift, A. Baker and ACM Sir Ronald Ivelaw-Chapman, p. 86 (Feb.).
Wings over the World, C. Hoge Mead, p. 86 (Feb.).
The Works of Isambard Kingdom Brunel, Sir Alfred Pugsley (Ed.), p. 457 (Oct.).

REWARDS and penalties for suppliers of equipment, R. D. C. Passey, pp. 303-312 (July).

REYNOLDS, A. D. and OLASON, M. L.
A view of air freight developments in the next decade, pp. 294-302 (July).

RICHARDS, Prof. E. J.
Putting a value on noise, pp. 193-204 (May).

ROBINSON, Dr. D. W.
The assessment of noise, with particular reference to aircraft, pp. 141-161 (April).

ROSIER, ACM Sir Frederick
Defence and Industry—where now? pp. 128-133 (March).

RUSSELL, J. B.
Determination of the damping of a system using a planimeter, pp. 82-84 (Feb.).

SAFETY
Design for safety, W. Tye, pp. 172-174 (April).

SATELLITES
An attitude control system for a flexible satellite providing active damping of flexural motion, J. M. Gething and K. F. Gill, pp. 134-139 (March).

SANKARA RAO, K., PUROHIT, S. C., and SARMA, M. S.
Numerical study of non-uniform axisymmetric under-expanded supersonic jet impingement on a finite disc, pp. 313-317 (July).

SARMA, M. S., SANKARA RAO, K. and PUROHIT, S. C.
Numerical study of non-uniform axisymmetric under-expanded supersonic jet impingement on a finite disc, pp. 313-317 (July).

SATELLITE NUTATION DAMPING
Non-active nutation damping for single-spin spacecraft of all mass distributions, S. W. Tonkin, pp. 394-401 (Sept.).

SEVENTY years of flight instruments and displays, R. A. Chorley, pp. 323-342 (Aug.).

SIMPSON, D. M. S.
Hawker Siddeley Hawk T Mk 1 two-seat ground attack/trainer aircraft, pp. 162-171 (April).

SQUIRE, L. C.
The independence of upper and lower wing flows at supersonic speeds, pp. 452-456 (Oct.).

SPACE
An attitude control system for a flexible satellite providing active damping of flexural motion, J. M. Gething and K. F. Gill, pp. 134-139 (March).
Engineering and development problems of Spacelab, H. E. W. Hoffmann, pp. 468-474 (Nov.).
Non-active nutation damping for single-spin spacecraft of all mass distributions, S. W. Tonkin, pp. 394-401 (Sept.).

STABILITY AND CONTROL AUGMENTATION SYSTEMS
Handling qualities of aircraft with stability and control augmentation systems—a fundamental approach, J. Hodgkinson, W. J. LaManna and J. L. Heyde, pp. 75-81 (Feb.).

STRANG, Dr. W. J.
Co-operation and Diversification, pp. 209-212 (May).

STRUCTURES
Advanced materials and their use in civil aircraft structures, Dr. A. C. Ham and A. J. Willshire, pp. 434-441 (Oct.).

Buckling of simply supported laminated plates on elastic foundations, G. J. Turvey, pp. 530-535 (Dec.).
On the wrinkling of honeycomb sandwich columns with laminated cross-ply faces, J. P. H. Webber, S. Kyriakides and C. T. Lee, pp. 264-272 (June).
Uniformly loaded, simply supported, antisymmetrically laminated, cross and angle-ply strips on a Winkler/Pasternak foundation, G. J. Turvey, pp. 222-226 (May).

TERRY, G.
A brief study of airspeed fluctuations on the landing approach in relation to reported and measured surface wind conditions, pp. 411-413 (Sept.).

THEORETICAL approach to the wedge shaped hot film probe performance, M. Aminzadeh and V. J. Modi, pp. 489-491 (Nov.).

TONKIN, S. W.
Non-active nutation damping for single-spin spacecraft of all mass distributions, pp. 394-401 (Sept.).

TURVEY, G. J.
Buckling of simply supported laminated plates on elastic foundations, pp. 530-535 (Dec.).
Uniformly loaded, simply supported, antisymmetrically laminated, cross- and angle-ply strips on a Winkler/Pasternak foundation, pp. 222-226 (May).

TYE, W.
Design for safety, pp. 172-174 (April).

UNIFORMLY loaded, simply supported, antisymmetrically laminated, cross- and angle-ply strips on a Winkler/Pasternak foundation, G. J. Turvey, pp. 222-226 (May).

VIEW of air freight developments in the next decade, A. D. Reynolds and M. L. Olason, pp. 294-302 (July).

VORTEX WAKES
The initial roll-up of a thick, two-dimensional wake behind a wing of finite span, H. Portnoy, pp. 442-447 (Oct.).

WEBBER, J. P. H., KYRIAKIDES, S. and LEE, C. T.
On the wrinkling of honeycomb sandwich columns with laminated cross-ply faces, pp. 264-272 (June).

WHEELER, R. L.
An appraisal of present and future large commercial hovercraft, pp. 354-364 (Aug.).

WILKINSON, K. G.
The technology and economics of air transport in its next phase, pp. 102-126 (March).

WILLSHIRE, A. J. and HAM, Dr. A. C.
Advanced materials and their use in civil aircraft structures, pp. 434-441 (Oct.).

WILSON, J. W. and HILLMAN, R. E.
Investigation into the optimum use of advanced displays in future transport aircraft, pp. 377-384 (Sept.).

WIMPENNY, J. C.
Costs and decision making, pp. 402-410 (Sept.).

WILBUR AND ORVILLE WRIGHT MEMORIAL LECTURE—64th
The technology and economics of air transport in its next phase, K. G. Wilkinson, pp. 102-126 (March).

WRIGHT, G. H., DENNING, R. M. and MILLER, S. C.
Future trends in aero gas turbine design: Part 1—Conventional engines, pp. 343-349 (Aug.). Part 2—Unconventional engines, pp. 385-393 (Sept.).

YATES, I. R.
Jaguar—a collaborative military aircraft programme, pp. 35-43 (Jan.).